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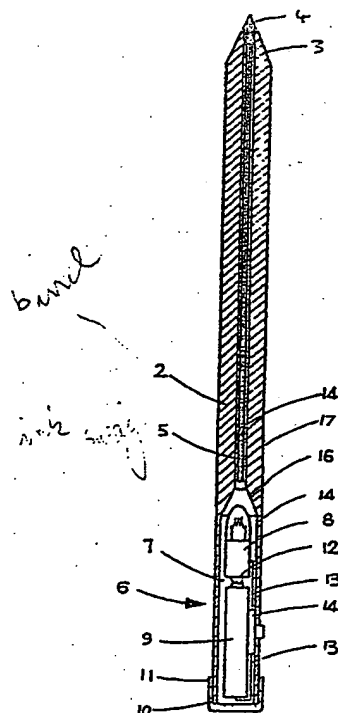
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WO 86/05746 A US 4518274 A US 4168521 A

(58) Field of search
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(54) Writing instrument with illumination

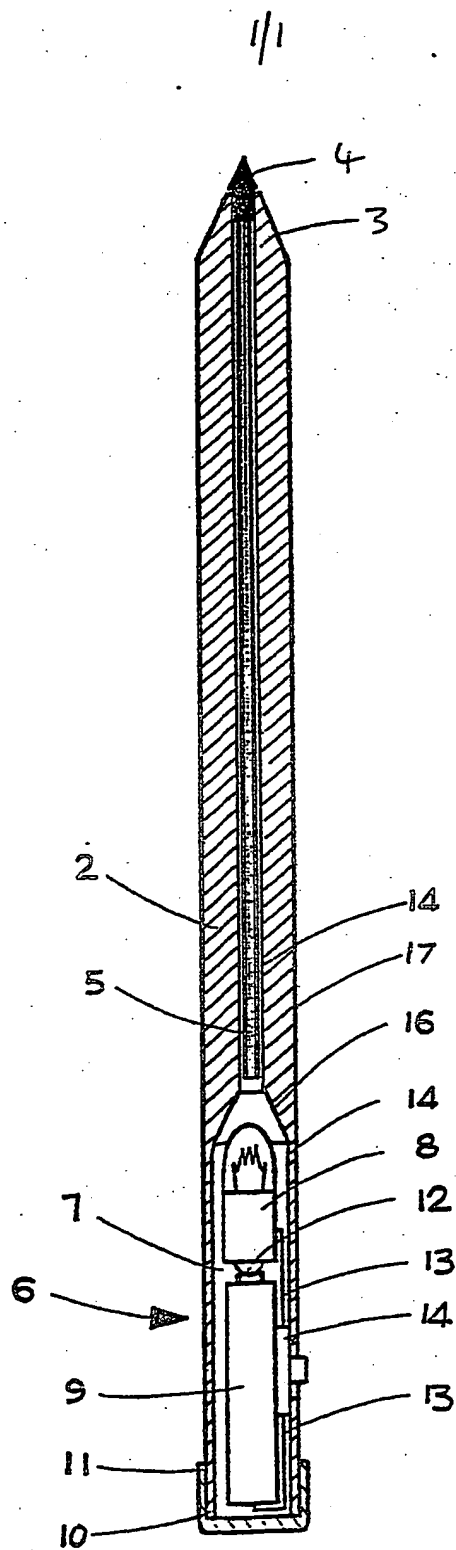
(57) A writing instrument 1 comprises a barrel 2 of translucent or transparent material. The barrel carries a ball-point pen tip 4 and ink supply 5. A light bulb 8 and battery 9 are housed in a chamber 7 at an end 6 of the barrel 2 distal of the tip 4. A switch 14 is provided for turning the bulb 8 on and off. Light from the bulb 8 is transmitted within the wall of the barrel to the tip 4 to illuminate the region of the tip 4.



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Writing Instrument

The present invention relates to writing instruments and in particular to writing instruments having a light or torch facility. Such writing instruments
5 are particularly useful for writing in the dark when no other light source is available or on an aeroplane, for example, when the writer does not wish to disturb other passengers.

The present invention provides a writing instrument
10 comprising an elongate barrel having a first end carrying a writing tip, an electrically powered light source housed in the barrel remote from the writing tip, a power supply housed in the barrel for the light source, and means for guiding light from the
15 light source to the region of the writing tip.

The writing tip may be, for example, a pen nib, a ball-point or a pencil lead.

Preferably the guiding means is formed by the barrel. The barrel may have a reflective inner
20 surface for reflecting the light towards the end of the barrel near the writing tip, the barrel being open or translucent at its end to allow the light to

pass out. Very preferably the light is guided within the barrel wall, between the inner and outer surfaces of the barrel. The barrel may be coated with an opaque material along at least parts of its length.

5 Preferably the writing instrument is in the form of a ball-point pen, and comprises an elongate translucent barrel supporting a ball-point writing tip at one end, a tube housing ink extending within the barrel from the writing tip, and a light source such as a
10 light emitting diode or incandenscent lamp is housed in the barrel, substantially in line with and adjacent an end of the tube and a battery or cell is housed in the barrel in line with the tube and light source. A switch for the power supply is preferably
15 provided.

Other preferred features and advantages of the invention will be apparent from the following description and the accompanying claims.

20 The invention will be further described by way of example with reference to the accompanying single figure of drawings which shows a longitudinal cross-section through a writing instrument according to the invention.

In the drawings, a writing instrument 1 comprises a translucent or transparent plastics barrel 2 which may be of material commonly used in the ball-point pen art. The barrel 2 has inner and outer surfaces 14, 17 and is elongate and supports at one end 3a ball point writing tip 4. A tube 5 carrying ink for the ball point 4 extends within the barrel 2 from the tip 4. The wall of the barrel 2 is chamfered at the end 3, tapering towards the tip 4. At the opposite end 6 of the barrel 2, distal of the writing tip, the inner diameter of the barrel is enlarged, the outer diameter of the barrel remaining constant, to form a chamber 7 housing a light bulb 8 and battery 9. The chamber 7 is sealed at its outer end 10 by a removable cap 11. The battery 9 is electrically connected directly with the lamp 8 at one terminal 12 and via a conductor 13 and switch 14, the switch 14 making and breaking the electrical circuit between the lamp 8 and battery 9.

The inner surface 14 of the barrel wall at the end 15 of the chamber 7 has a frustoconical region 16 adjacent the lamp 8.

In use, the circuit between the battery 9 and lamp 8

is made by turning the switch 14 on. Light passes into the wall of the barrel, in particular through the frustoconical inner surface portion 14. The barrel wall forms a light guide and light is transmitted down the barrel to the tip 4. Light will travel within the barrel wall due to internal reflection at the inner and outer surfaces 14, 17 and pass out through the chamfered end 3. Some light will pass out through the outer surface 17 and this may enhance the visual effect of the writing instrument and provide general illumination.

A pattern may be formed, for example, by coating the outer surface 17 with opaque material, and the transmission of light to the tip 3 may be enhanced by having a reflective coating on the inner and outer surfaces.

Various modifications may be made to the described embodiment and it is desired to include all such modifications as fall within the scope of the accompanying claims.

CLAIMS

1. A writing instrument comprising an elongate barrel having a first end carrying a writing tip, an electrically powered light source housed in the barrel remote from the writing tip, and a power supply housed in the barrel for the light source, wherein a light guide is provided for guiding light from the light source to the region of the writing tip.
2. A writing instrument as claimed in claim 1, wherein the writing tip is a ball-point.
3. A writing instrument as claimed in claim 1 or 2, wherein a switch is provided for switching the light source on and off.
4. A writing instrument as claimed in claim 1, 2 or 3, wherein the barrel forms the light guide.
5. A writing instrument as claimed in claim 4, wherein light is guided within the barrel wall.
6. A writing instrument as claimed in claim 5, wherein the light source is housed in a chamber bounded by an inner surface of the barrel, a portion

of said inner surface extending transverse to the longitudinal direction of the barrel at a region between the light source and the tip to facilitate entry of light from the source into the barrel wall.

5 7. A writing instrument as claimed in claim 5 or 6, wherein the outer surface of the barrel is tapered towards the writing tip.

8. A writing instrument substantially as hereinbefore described with reference to the
10 accompanying drawings.

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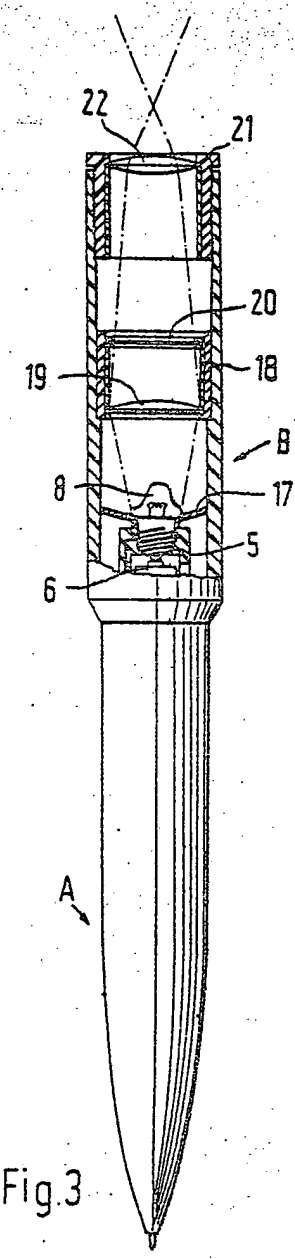
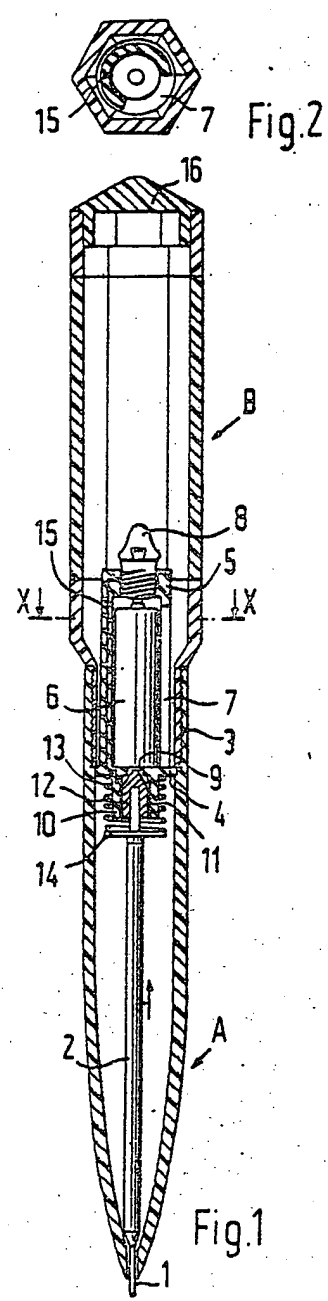
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